

# Exam 2 Study Guide

## Chapter 4

- Calculate heat needed to change temperature
- Calculate energy required to melt or boil a substance
- Apply relationships between pressure, volume and temperature for a gas
- Relationship between attractive forces between molecules or ions and relate these forces to physical properties (melting and boiling points; solubility)
- Hydrogen bonding (H-bond donor and acceptor) and its role in solubility in water

## Chapter 5

- % concentration calculations
- Effect of temperature and pressure on solubility
- Recognize hydrophilic and hydrophobic regions in a molecule
- Molarity calculations
- Direction of osmosis and dialysis; hemolysis and crenation
- Convert moles and equivalents in ionic solutions; use equivalents in calculations for quantities of dissolved species
- Dilution calculations

## Chapter 6

- Distinguish between physical and chemical change
- Balance chemical equations
- Relate mole to mole, mole to mass and mass to mass quantities in a balanced chemical equation (this will be in Exam 3)
- Relate quantity of reactant / product to heat of reaction (know that there is a direct relationship)
- Understand relationships between the rate of a reaction and activation energy, temperature, concentration and catalysts – interpret energy diagram for endothermic and exothermic reactions
- Understand chemical equilibrium concept (this may be in Exam 3)

## Chapter 3

- Ionic compound nomenclature